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Seagate

Data Sheet

Pipeline HD®

The industry's leading combination of video streaming and low-power performance

2TB, 1.5TB, 1TB, 500GB, 320GB, 250GB, 160GB • SATA

Key Features and Benefits

- Eco friendly power savings enable the most energy-efficient and cost-effective system designs.
- Qualified for 24x7 operational profile with leading predicted AFR of 0.55% for demanding consumer electronics applications
- 75°C operating temperature capability for improved system reliability
- Video streaming optimized to support at least 10 simultaneous high-definition video streams for multi-room DVR applications
- Seagate SoftSonic™ motor technology enables years of ultra-quiet, worry-free operation with acoustics performance as low as 1.9 bels.
- Up to 2TB capacity enabling up to 400 hours of HD storage or 2000 hours of SD television recording
- Sweet-spot capacities enable premium television services such as video on demand, high-definition storage and multi-room streaming for DVRs and media centers.
- Seagate Think Green sustainability goes beyond green with improved reliability, low power consumption, leading environmental compliance programs, RoHS and low-halogen compliance.

Best-Fit Applications

- Consumer DVR and media center applications
- Embedded surveillance DVR (SDVR) systems
- Home theater PCs, karaoke and audio jukeboxes
- Cable, satellite and IPTV set-top boxes

Think Green™

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Specifications	2TB[1]	1.5TB[1]	1TB[1]	500GB[1]	320GB[1]	250GB[1]	160GB[1]
Model Number	ST2000VM002	ST1500VM002	ST31000322CS	ST3500312CS	ST3320311CS	ST3250312CS	ST3160316CS
Interface	SATA 3Gb/s NCQ	SATA 3Gb/s NCQ	SATA 3Gb/s NCQ	SATA 3Gb/s NCQ	SATA 3Gb/s NCQ	SATA 3Gb/s NCQ	SATA 3Gb/s NCQ
Performance							
Cache, Multisegmented (MB)	64	64	8	8	8	8	8
SATA Data Transfer Rate (Gb/s, max)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Simultaneous SDTV Streams Supported (Assumes 256K host buffer per stream)	10	10	10	10	10	10	10
Simultaneous HDTV Streams Supported (Assumes 2-MB host buffer per stream)	10	10	10	10	10	10	10
Power-On to Ready (typical, sec)	<15	<15	<12	<12	<12	<12	<12
Standby to Ready (typical, sec)	<15	<15	<12	<12	<12	<12	<12
Maximum External Transfer Rate (MB/s)	300	300	300	300	300	300	300
Voltage							
Voltage Tolerance (including noise)	5V ± 5% 12V ± 10%	5V ± 5% 12V ± 10%	5V ± 5% 12V ± 10%	5V ± 5% 12V ± 10%	5V ± 5% 12V ± 10%	5V ± 5% 12V ± 10%	5V ± 5% 12V ± 10%
Environmental							
Low Halogen	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ambient Temperature (°C) Operating (ambient min) Operating (drive case max) Nonoperating (ambient min) Nonoperating (ambient max)	0 75 −40 70	0 75 −40 70	0 75 −40 70	0 75 −40 70	0 75 −40 70	0 75 −40 70	0 75 −40 70
Temperature Gradient, Operating/Nonoperating (°C per hour max)	20/30	20/30	20/30	20/30	20/30	20/30	20/30
Relative Humidity, Operating/Nonoperating (non-condensing, %)	5 to 90/5 to 95	5 to 90/5 to 95	5 to 90/5 to 95	5 to 90/5 to 95	5 to 90/5 to 95	5 to 90/5 to 95	5 to 90/5 to 95
Web Bulb Temperature, Operating/Nonoperating (°C)	37.7/40.0	37.7/40.0	37.7/40.0	37.7/40.0	37.7/40.0	37.7/40.0	37.7/40.0
Shock Operating: 2ms (max, Gs) Nonoperating: 2ms (max, Gs)	80 300	80 300	70 350	70 350	70 350	70 350	70 350
Vibration, Operating 5Hz to 22Hz (limited displacement) (Gs) 22Hz to 350Hz (Gs) 350Hz to 500Hz (Gs)	0.25 0.50 0.25	0.25 0.50 0.25	0.50 0.50 0.25	0.50 0.50 0.25	0.50 0.50 0.25	0.50 0.50 0.25	0.50 0.50 0.25
Vibration, Nonoperating 5Hz to 350Hz (limited displacement) (Gs) 350Hz to500Hz (Gs)	3.00 3.00	3.00 3.00	5.00 1.00	5.00 1.00	5.00 1.00	5.00 1.00	5.00 1.00
Power Management							
Startup Current (12V typical, amps)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Consumer Storage Profile (W)	4.93	4.93	4.1	3.4	3.4	3.4	3.4
Idle Average (W)	4.5	4.5	3.8	3.0	3.0	3.0	3.0
Standby/Sleep Mode (typical, W)	0.5	0.5	0.7	0.7	0.6	0.7	0.6
Acoustics							
PVR Profile (typical/max, bels)	2.2/2.4	2.2/2.4	1.9/2.0	1.9/2.0	1.9/2.0	1.9/2.0	1.9/2.0
Reliability							
Contact Start-Stop Cycles (25°C, 50% relative humidity)	—	—	50,000	50,000	50,000	50,000	50,000
Load/Unload Cycles (25°C, 50% relative humidity)	300,000	300,000	—	—	—	—	—
Nonrecoverable Read Errors per Bits Read (sectors, max)	1 per 10E14	1 per 10E14	1 per 10E14	1 per 10E14	1 per 10E14	1 per 10E14	1 per 10E14
Annualized Failure Rate (AFR)	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%	0.55%
Power-On Hours	8760	8760	8760	8760	8760	8760	8760
Limited Warranty (years)	3	3	3	3	3	3	3
Dimensions							
Height (mm/in, max)	26.1/1.028	26.1/1.028	26.1/1.028	20.0/0.795	20.0/0.795	20.0/0.795	20.0/0.795
Width (mm/in, max)	101.6/4.0	101.6/4.0	101.85/4.010	101.85/4.010	101.85/4.010	101.85/4.010	101.85/4.010
Depth (mm/in, max)	147.00/5.78	147.00/5.78	146.99/5.787	146.99/5.787	146.99/5.787	146.99/5.787	146.99/5.787
Weight (g/lb, max)	635/1.39	635/1.39	600/1.323	380/0.838	415/0.915	380/0.838	415/0.915

1 One gigabyte, or GB, equals one billion bytes and one terabyte, or TB, equals one trillion bytes when referring to hard drive capacity.

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